

REMARKS

Claims 1-19 are pending in the application. Claims 1-6 and 15-19 are withdrawn from consideration in response to Applicant's restriction election. Claims 7-14 stand rejected in the Office Action. Applicant has cancelled claims 1-6 and 15-19 as drawn to non-elected inventions, and has also cancelled claims 7-8. New claims 20-33 are offered with this amendment. Upon entry of the amendment, claims 9-14 and 20-33 remain pending.

Support for the new claims is found in the specification as filed. For example, support to claims 20-25 is found in original claims 7, 8, and 1-6. Support for claims 26-33 is also found in the original claims and the specification. Support for the limitation that the surface protected ceramic body can be heated to 2500°F for 20 hours without cracking is found for example in paragraph 31 on page 10. Support for claims 30-33 is found for example in paragraph 27 on page 9 of the specification. No new matter is added with the amendments. Accordingly, Applicant respectfully requests entry of the amendments.

Claim Objections

Claims 7-8 are objected to as dependent upon non-elected claims. Applicant has rewritten claims 7 and 8, incorporating their subject matter into claims 20-25. Accordingly, Applicant respectfully requests that the objections to claims 7 and 8 be withdrawn.

Claim Rejections Under 35 USC §103

Claims 7 and 9-14 are rejected under 35 USC §103 as unpatentable over DiChiara, Jr. et al., U.S. Patent 5,928,775 (the DiChiara reference) in view of Kourtides, et al., U.S. Patent 5,296,288 (the Kourtides reference). Claim 8 is rejected as obvious over the DiChiara reference and the Kourtides reference and further in view of Baker, et al., U.S. Patent 5,310,592 (the Baker reference). For the reasons discussed below, Applicant respectfully traverses the rejections and requests reconsideration.

For a rejection of claims under §103 in view of two or more references, the references when combined must teach or disclose every limitation of the claims, and there must be a motivation to combine the teachings of the references to arrive at the subject matter of the claim. Just because two references can be combined, the combination is not obvious unless there is a teaching that the combination is desirable. Further, the proper test under §103 is whether, in light of the teachings of the references, the invention as a whole would have been obvious to one

of skill in the art. The invention as a whole includes not only subject matter literally recited in the claims, but also to those properties inherent in the subject matter and disclosed in the specification. *In re Antonie*.

In light of the problems being solved by the current invention, a person of skill in the art would not have been motivated to combine the Kourtides reference with the DiChiara reference. The current invention has as one of its objects to produce a protective ceramic body that can withstand temperatures above 2000°F. See paragraphs 8 and 9 on page 3. Applicant achieves that object with the method recited in the claims and exemplified in the example on page 10. Specifically, ceramic bodies prepared by a method of the invention can withstand a temperature of 2500°F for 20 hours without cracking or delamination. The DiChiara reference, on the other hand, describes ceramic bodies that are only operable to about 2000°F. See, for example, column 3, lines 14-16 and column 7, lines 8-12. Further, a perceived limitation of the DiChiara reference is described in the current specification at paragraph 8. Thus, in part, Applicant was seeking an improvement over the protective tile of the DiChiara reference.

A person of skill in the art having possession of the protected tile of the DiChiara reference and desiring to improve its temperature stability would not look to the Kourtides reference to solve this problem. The Kourtides reference provides protective coatings for ceramics, but has its object only to improve thermal stability to a temperature of 1650°C. See column 1, lines 18-23 and lines 37-44. That is, a skilled person having the DiChiara disclosure with tiles stable to 2000°F and wishing to increase the temperature of stability, would not look to the Kourtides reference, as Kourtides teaches only how to protect surfaces to 1650°C. Consequently, there is no motivation to combine any of the disclosure of the Kourtides reference with that of DiChiara reference.

The invention as a whole would not have been obvious in light of the teachings of the DiChiara and Kourtides references. The invention as a whole includes the features recited in the claims as well as features inherent in the invention and disclosed in the application. Specifically, the invention as a whole includes the fact that the protected tiles of the invention are stable to 2500°F. Such a limitation is explicitly included in new claims 26-33. Applicant has discovered that adding at least one boron-containing compound into slurries such as disclosed in the DiChiara reference results in compositions and methods that can be used in his invention to produce highly temperature resistant tile.

In light of the discussion above, the references do not make such an invention obvious. To the contrary, it is only in light of the current specification that the two references may be combined at all to arrive at the subject matter of the claims. Otherwise, as noted above, no motivation may be found to combine the two references. For these reasons, Applicant respectfully submits that claims 9-14 and new claims 20-33 are patentable over the cited references. Accordingly, Applicant respectfully requests the rejections be withdrawn.

Claim 8 is rejected further in view of the Baker reference. Applicant respectfully submits that the Baker reference is insufficient to overcome the deficiencies of the DiChiara reference and the Kourtides reference as discussed above. Claim 8 has been cancelled, with its subject matter incorporated into claim 25. Accordingly, Applicant respectfully requests that claim 25 be passed to allowance.

New Claims 26-33

New claims 26-33 are offered to further define the invention. The claims include the limitation that the surface protected ceramic body can be heated at 2500°F for 20 hours without cracking. As discussed above, this limitation further distinguishes the claims from the references. Applicant respectfully requests that claims 26-33 be passed to allowance.

CONCLUSION

For the reasons discussed above, Applicant believes that claims 9-14 and 20-33 are in an allowable condition and respectfully requests an early notice of such allowance. The Examiner is invited to telephone the undersigned if that would be helpful to resolving the issue.

Respectfully submitted,

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